Q277) The two dimensional matrix transformation for reflection of a point with respect to y-axis is \_\_\_\_\_\_\_\_\_\_\_

1. -1 0 0

0 1 0

0 0 1

1. 1 0 0

0 -1 0

0 0 1

1. 1 0 0

-1 0 0

0 0 1

1. 1 0 0

0 1 0

0 0 -1

Q278) The equation of the plane passing through the point (1,2,3) having the normal vector V=2i+3j+4k is

1. 3(x-1)+4(y-2)+2(z-3)=0
2. 2x+3y+4z=20
3. 4(x-1)+3(y-2)+2(z-3)=0
4. 2x+3y+4z=10

Q279) Perspective projection is characterized by the

1. View plane alone
2. Direction of projection and the view plane
3. Center of projection and the view plane
4. Center of projection alone

Q280) Parallel projection is characterized by the

1. View plane alone
2. Direction of projection and the view plane
3. Center of projection and the view plane
4. Center of projection alone

Q281) Oblique projection is

1. An orthographic projection
2. A perspective projection
3. A parallel projection
4. Axonometric projection

Q282) Axonometric projection is

1. An orthographic projection
2. A perspective projection
3. An oblique projection
4. A multiview projection

Q283) Isometric projection is

1. An orthographic projection
2. A perspective projection
3. An oblique projection
4. A multiview projection

Q284) Cavalier projection is

1. An orthographic projection
2. A perspective projection
3. An oblique projection
4. A multiview projection

Q285) Multiview projection is

1. An axonmetric projection
2. A perspective projection
3. An oblique projection
4. A parallel projection

Q286) Dimetric projection is

1. An parallel projection
2. A perspective projection
3. An oblique projection
4. A multiview projection

Q287) Cabinet projection is

1. An orthographic projection
2. A perspective projection
3. An oblique projection
4. A multiview projection

Q288) View confusion is an anomaly of

1. Orthographic projection
2. Perspective projection
3. An oblique projection
4. Multiview projection

Q289) If the direction of the projection is perpendicular to the view plane then that is called

1. Orthographic projection
2. Perspective projection
3. Oblique projection
4. Cavalier projection

Q290) An orthographic projection in which the direction of the projection is not parallel any of the three principal axes is called

1. Cavalier projection
2. Perspective projection
3. Oblique projection
4. Axonometric projection

Q291) An axonometric projection in which the direction of the projection makes equal angle with all the three principal axes is called

1. Cavalier projection
2. Perspective projection
3. Oblique projection
4. Isometric projection

Q292) An axonometric projection in which the direction of the projection makes equal angles with exactly two of the three principal axes is called

1. Cavalier projection
2. Dimetric projection
3. Oblique projection
4. Isometric projection

Q293) An axonometric projection in which the direction of the projection makes unequal angles with all the three principal axes is called

1. Cavalier projection
2. Dimetric projection
3. Trimetric projection
4. Isometric projection

Q294) Which of the following is NOT true about quaternions?

a) They are made up of 4 numbers

b) They should always be normalized to length 1

c) They can be used to represent all affine transforms

d) They can be used to define the rotation of an object

Q295) Which of the following does NOT figure into the Field of View of a pinhole camera?

1. The direction of projection
2. The distance from the center of projection to the projection plane
3. The size of the projection plane

Q296) This projection technique has the direction of projection perpendicular to the viewing plane, but the viewing direction is NOT perpendicular to one of the principle faces.

1. Orthographic Parallel Projection
2. Axonometric Parallel Projection
3. Oblique Parallel Projection

Q297) This projection technique does NOT have the direction of projection perpendicular to the viewing plane.

1. Orthographic Parallel Projection
2. Axonometric Parallel Projection
3. Oblique Parallel Projection

Q298) This projection technique has the direction of projection perpendicular to the viewing plane, and the viewing direction is perpendicular to one of the principle faces.

1. Orthographic Parallel Projection
2. Axonometric Parallel Projection
3. Oblique Parallel Projection

Q299) When transforming a random Axis-Aligned Bounding Box defined by the points (nearx, neary, nearz) and (farx, fary, farz) to the standard orthographic viewing box, which affine transforms are used?

1. shear and translation
2. rotation and scale
3. scale and shear
4. translation and scale

Q300) In class, we discussed the purpose of the front and back clipping planes in OpenGL. Which of the following was NOT a purpose for using clipping planes?

1. division by zero
2. objects behind the center of projection mapping onto the projection plane
3. avoiding the problems of infinite viewing volume size

Q301) In class, we discussed how the image of the Double Eagle Tanker was obtained for the large poster in the main hall of Sitterson. It required rendering several perspective images using OpenGL. Which of the following was NOT a step required in that process?

1. handling projection planes non-orthogonal to the viewing direction
2. cutting a single projection plane into many separate projection planes
3. rotating the viewing direction to be the same as the –z direction
4. handling several different centers of projection

Q302) In OpenGL, there are several different matrices. We have discussed two of them in class. Which one of the below would be used in conjunction with a glRotatef function call?

1. GL\_MODELVIEW
2. GL\_PROJECTION

Q303) In OpenGL, there are several different matrices. We have discussed two of them in class. Which one of the below would be used in conjunction with glFrustum?

1. GL\_MODELVIEW
2. GL\_PROJECTION

Q304) Which of the following is the order that geometry operations are performed in OpenGL (where we read the order from left to right)?

1. GL\_PROJECTION  GL\_MODELVIEW  Perspective division
2. GL\_MODELVIEW  GL\_PROJECTION  Perspective division
3. Perspective division  GL\_PROJECTION  GL\_MODELVIEW
4. GL\_MODELVIEW  Perspective division  GL\_PROJECTION
5. GL\_PROJECTION  Perspective division  GL\_MODELVIEW

For the next 4 questions, match the pictures on the right with the corresponding term on the left. The arrows in the picture denote light rays. The dashed lines represent the material type to be considered. The key is in the interaction of the light rays with the material.

(b)

Q305) Specular

Q306) Diffuse

(a)

Q307) Transparent

Q308) Translucent

(d)

(c)

Q309) In “Utah” graphics, lights are simplified in order to approximate light/matter interaction with a minimum amount of work. Which of the following is NOT true about the simplifications made in “Utah” graphics lights?

1. Light intensity and color are folded into one value.
2. Lights are assumed to have zero size
3. Spotlights can not be handled
4. Soft shadows can not be handled

Q310) The Phong reflection model simplifies light-matter interactions into (essentially) 4 vectors and a number of constants. Each piece of the Phong model uses different vectors and constants. Which portion does NOT include taking a dot product?

1. Ambient
2. Diffuse
3. Specular

Q311) The Phong reflection model simplifies light-matter interactions into (essentially) 4 vectors and a number of constants. Which piece of the Phong model is responsible for giving spheres their bright white spots?

1. Ambient
2. Diffuse
3. Specular

Q312) The Phong reflection model simplifies light-matter interactions into (essentially) 4 vectors and a number of constants. Which of the following is NOT a vector needed for the Phong reflection model?

1. Surface Normal
2. Direction to Viewer
3. Direction to Material Center
4. Direction to Light

Q313) True or false: In the Phong Reflection model, ambient light is the same everywhere.

1. True
2. False

Q314) In the Phong reflection model, there are 3 constants (a, b, c) which are used to describe the qualities of which of the following phenomena?

1. The material reaction to ambient, diffuse and specular light (respectively)
2. The amount to perturb reflection vectors as they are mirrored across the normal
3. The size (in each dimension) which the light is assumed to have
4. The attenuation of a point light source with distance

Q315) The traditional mouse requires a mouse pad to provide friction for its:

1. Touchpad.
2. Tracker.
3. Optical sensor.
4. Rollerball.

Q316) The standard input device for a PDA is a:

1. Stylus.
2. Touch pad.
3. Keyboard.
4. Trackball mouse.

Q317) The flicker effect of a cathode ray tube is controlled by its:

1. Resolution.
2. Refresh rate.
3. Dot pitch.
4. Data transfer rate.

Q318) A monitor with high dot pitch will have:

1. A relatively large number of pixels.
2. A high number of possible colors in its display.
3. Wide gaps between pixels.
4. Relatively fast recharging of the pixels’ illumination.

Q319) The larger the number of pixels of a computer monitor, the higher its:

1. Resolution.
2. Refresh rate.
3. Dot pitch.
4. Data transfer rate.

Q320) The maximum complete electron scans of current CRT monitors is \_\_\_\_\_\_\_\_\_\_\_\_ times per second.

1. 25
2. 50
3. 75
4. 100

Q321) Electron beam scanning is a characteristic of:

1. Laser printers.
2. Flat panel monitors.
3. Cathode ray tubes.
4. Liquid crystal display.

Q322) The type of output device that utilizes a fluorescent panel for generating light waves is a(n):

1. CRT monitor.
2. Inkjet printer.
3. Laser printer.
4. LCD monitor.

Q323) The main advantage of active matrix over passive matrix technology is that active matrix panels:

1. Have higher screen resolution.
2. Can selectively recharge individual pixels.
3. Cost less than passive matrix panels.
4. Require less power consumption than passive matrix panels.

Q324) The following are all advantages of LCD over CRT monitors EXCEPT:

1. Wider viewing area relative to size of the monitor.
2. Less likely to cause eyestrain.
3. More friendly to the environment.
4. Wider viewing angle.

Q325) The fastest and quietest type of printer is a(n):

1. Dot-matrix printer.
2. Inkjet printer.
3. Laser printer.
4. Plotter.

Q326) The type of large printer that can most accurately produce images requiring precise, continuous lines is a(n):

1. Plotter.
2. Inkjet printer.
3. Laser printer.
4. Dot-matrix printer.

Q327) Which of the following printers is characterized by melting wax-basd ink onto ordinary paper?

1. Dot-matrix
2. Inkjet
3. Laser
4. Thermal

Q328) A laser printer works by:

1. Removing static electrical charge from a metal drum.
2. Utilizing drop-on-demand technology.
3. Striking the paper with hammer-like keys.
4. A process called direct-thermal printing.

Q329) The principle advantage of adding memory to a printer is to increase:

1. Resolution.
2. Print speed.
3. Number of colors in output.
4. Dpi.

Q330) The resolution of a printer is measured in terms of:

1. Pixel density.
2. Dot pitch.
3. Hertz.
4. Dpi.

Q331) Which of the following types of drives will be housed in an internal drive bay?

1. Hard drive
2. Floppy drive
3. Zip drive
4. CD-ROM drive

Q332) Which of the following ports is most likely to be used for connecting a printer to your computer?

1. Serial
2. Parallel
3. Ethernet
4. FireWire